## IN THE CLAIMS:

All pending claims and their present status are produced below. Claims 6-10, 17, and 20 are amended herein.

6. (Currently amended) A method for performing variable time processes in parallel on a plurality of ordered incoming ~~entities~~ packets, on a plurality of processors, the method comprising:

assigning each of the plurality of ordered incoming ~~entities~~ packets to one of the plurality of processors, the packets comprising at least a portion of a micro-flow;

pre-processing each of the plurality of ordered incoming ~~entities to establish an order of the plurality of ordered incoming entities~~ packets to determine whether processing on a previous packet is in progress, the previous packet comprising at least a portion of the micro-flow; and

processing each of the plurality of ordered incoming ~~entities~~ packets on the ~~corresponding one~~ a processor of the plurality of processors to which ~~it~~ the ordered incoming packet is assigned, in response to completion of processing of the previous packet.

7. (Currently amended) The method of claim 6, wherein the plurality of ordered incoming ~~entities~~ packets comprise a plurality of data packets in a network.

8. (Currently amended) The method of claim [[7]] 6, wherein the processing further comprises:

extracting information from a header of each of the plurality of ordered incoming packets;

hashing the extracted information for each of the ordered incoming packets;

storing the hashed information; and

responsive to receipt of a new packet ~~being received~~, comparing the hash of the extracted information for the new packet with the stored information.

9. (Currently amended) The method of claim 6, wherein the assigning comprises:

selecting one of the plurality of processors which is free to process one of the plurality of ordered incoming ~~entities~~ packets at the time that the one of the plurality of ordered incoming ~~entities~~ packets is received.

10. (Currently amended) The method of claim 6, wherein the pre-processing further comprises:

determining whether a first in the plurality of ordered incoming entities is currently being processed at the time when a subsequent one of the plurality of ordered incoming ~~entities~~ packets is received;

responsive to determining that the first in the plurality of ordered incoming ~~entities~~ packets is currently being processed:

not starting processing of the subsequent one of the plurality of ordered incoming ~~entities~~ packets;

redetermining at a later time whether the first in the plurality of ordered incoming ~~entities~~ packets is currently being processed; and

responsive to determining that the first in the plurality of ordered incoming ~~entities~~ packets is not currently being processed, starting processing of the subsequent one of the plurality of ordered incoming ~~entities~~ packets.

17. (Currently amended) A method ~~for performing variable time processes~~ to process in parallel on a plurality of processors, ~~on~~ a plurality of packets in a network which comprise a ~~plurality of flows~~ micro-flow, the method comprising:

assigning each of the plurality of packets to one of the plurality of processors;

determining whether a first packet in the plurality of packets comprising ~~one of the plurality of flows~~ the micro-flow is currently being processed ~~at the time~~ when a subsequent ~~one of in~~ packet of the plurality of packets comprising the ~~one of the plurality of flows~~ micro-flow is received;

responsive to determining that the first packet in the plurality of packets is currently being processed:

not starting processing of the subsequent ~~one~~ packet of the plurality of packets;

~~redetermining~~ at a later time determining whether the first packet in the plurality of packets is currently being processed;

responsive to determining that the first packet in the plurality of packets is not currently being processed, starting processing of the subsequent ~~one~~ packet of the plurality of packets; and

processing each of the plurality of packets on ~~the corresponding one~~ a processor of the plurality of processors to which ~~it~~ the packet is assigned.

20. (Currently amended) An electronically readable medium storing a program for permitting a computer to perform a method ~~for performing variable time processes~~ to process in parallel on a plurality of processors, ~~on~~ a plurality of packets in a network which comprise a ~~plurality of micro flows~~ micro-flow, the method comprising:

assigning each of the plurality of packets to one of the plurality of processors;

determining whether a first packet in the plurality of packets comprising ~~one of the plurality of micro-flows~~ the micro-flow is currently being processed ~~at the time~~ when a subsequent ~~one of~~ packet in the plurality of packets comprising the ~~one of the plurality of micro-flows~~ micro-flow is received;

responsive to determining that the first packet in the plurality of packets is currently being processed:

not starting processing of the subsequent ~~one~~ packet of the plurality of packets;

redetermining at a later time whether the first packet in the plurality of packets is currently being processed;

responsive to determining that the first packet in the plurality of packets is not currently being processed, starting processing of the subsequent ~~one~~ packet of the plurality of packets; and

processing each of the plurality of packets on ~~the corresponding one~~ a processor of the plurality of processors to which ~~it~~ the packet is assigned.